

Table 2

	polymer	monomer	copying
9	polymer 1	ethylene glycol dimethacrylate	good
1 0	polymer 2	ethylene glycol dimethacrylate	good
1 1	polymer 3	triethylene glycol dimethacrylate	good
1 2	polymer 3	1,3-butenediol dimethacrylate	good
1 3	polymer 3	1,6-hexanediol dimethacrylate	good
1 4	polymer 3	neopentyl glycol dimethacrylate	good
1 5	polymer 3	tetraethylene glycol diacrylate	good
1 6	polymer 3	nonaethylene glycol diacrylate	good
1 7	polymer 3	1,6-hexanediol diacrylate	good
1 8	polymer 3	neopentyl glycol diacrylate	good
1 9	polymer 3	Trimethylolpropane trimethacrylate	good
2 0	polymer 3	Trimethylolpropane triacrylate	good
2 1	polymer 3	Tetramethylolmethane tetraacrylate	good
2 2	polymer 3	Dipentaerythritol hexaacrylate	good
2 3	polymer 3	9,9-bis(4-(2-acryloyloxyethoxy)phenyl)fluorene	good

polymer 1: diallylorthophthalate prepolymer (Daiso DAP, Type K)

polymer 2: diallylisophthalate prepolymer (ISODAP)

polymer 3: diallylorthophthalate prepolymer (Daiso DAP, Type A)

EXAMPLES 27 TO 36

(1) 2 g of diallylorthophthalate prepolymer ("Daiso DAP Type A" produced by Daiso Co., Ltd.), 3 g of a (meth)acrylate monomer shown in Table 3, 0.25 g of benzil, 0.085 g of Michler's ketone, and 3.5g of acetone were mixed at an ordinary temperature to prepare recording material compositions comprising these components.

(2) The compositions were coated on one surface of a glass plate substrate having a dimension of 60 x 60 x 1.3 mm in an appropriate amount, and acetone was removed from the coated layer under reduced pressure, to produce recording materials having a two-layer structure comprising the substrate and the recording layer.

(3) A PET film in a strip form having a size of 1 x 60 mm and a thickness of 20 μ m was placed on the recording layer, and a protective material comprising a glass plate having the same size as the substrate was placed thereon, to produce three-layer photosensitive plates having a sandwich form for recording a hologram.

(4) Interference was formed between object light and reference light by using a He-Cd laser. The three-layer photosensitive plate for recording a hologram was placed at a position, at which a fringe pattern formed by the interference could be caught. The photosensitive plate was exposed to He-Cd laser light (2.5 mW/cm²) for a prescribed period of time under the conditions, and an interference fringe to be a hologram could be recorded on the photosensitive plate.

The recording material compositions obtained in Examples 27 to 36 and results of measurement of diffraction efficiency conducted by using

them are shown in Table 3.

Evaluation of performance

The diffraction efficiency of each transmission type hologram obtained in the above-mentioned Examples 27-36 was calculated by determining a ratio of diffracted light to incident light with a light power meter (OPTICAL POWER/ENERGYMETER, MODEL 66XLA produced by PHOTODYNE Co., Ltd.) by the following equation.

Diffraction efficiency (%) = (diffracted light intensity / incident light intensity) \times 100